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EDUCATIONAL ACHIEVEMENT OF PROBLEM CHILDREN

PAYNTER AND BLANCHARD

A STUDY OF
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A STUDY OF
EDUCATIONAL ACHIEVEMENT
OF PROBLEM CHILDREN

BY

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I

Introductory Statement

THE study is based upon data taken from the case records of the demonstration child guidance clinics in Los Angeles and Philadelphia. These clinics were conducted by the National Committee for Mental Hygiene as part of the Commonwealth Fund program for the prevention of delinquency, and were followed by the establishment of locally supported community clinics in those cities. This investigation was undertaken during the demonstration period, while the authors were psychologists on the staffs of the clinics.

In accordance with the purpose of the Commonwealth Fund program these clinics were primarily concerned with the practical aspects of diagnosis and treatment for children who presented problems of personality and behavior. The case records accumulated in the discharge of these major responsibilities, however, provide a valuable source of information regarding various questions pertaining to the better understanding of such problems. This is true of all well-organized child guidance clinics, where the close coordination of the work of psychologists, psychiatrists, and psychiatric social workers insures unusual richness of the data collected in the case records.[1] The authors were glad to take advantage of the opportunity thus afforded for research based upon this material.

[1] Studies based on the interpretation of individual case records have already been published by the Commonwealth Fund: *Three Problem Children*, *The Problem Child in School*, *The Problem Child at Home*.

It may be only honest to confess that the results from this statistical study were far different from what had been anticipated. We had expected that the personality-behavior deviations of pupils would prove to have affected their scholarship to such a degree that statistical methods would show a decided general tendency in the direction of impaired educational achievement. It is because the results were so out of harmony with this theory that we have in Section VI subjected our methodology to detailed analysis and criticism.

Various difficulties which were encountered in the present study have been described rather fully in the hope that other investigators may be saved some of the experimentation in methods which we were forced to make. For the methods of investigation, the conclusions reached, and the views expressed, the authors, of course, assume responsibility.

II

Orientation of the Study

IN its present stage, child guidance is essentially practical. Its studies are made for the purpose of diagnosis and treatment, and its efforts are directed toward the improvement of conditions which affect the adjustment of the child. In order to carry out these aims, however, a wealth of information is obtained concerning each individual case, for every fact that can be ascertained may have an important bearing on the child's adjustment.

Although this information is collected with practical ends in view, its availability presents an opportunity for analysis and study in the search for such knowledge as may enable us to improve the technique of our practice. Because the data were obtained in connection with everyday problems, they are perhaps more descriptive of actual life situations than would be true in laboratory or classroom studies.

At the outset of our investigation, we were confronted by various difficulties affecting our methodology. The field is practically new and uncharted. We had certain relatively exact data to be compared with more fluid and evanescent phenomena. Although this study is concerned with the results of the generally used intelligence and educational tests, in the present state of the science of mental testing such measures represent only an approximate index of the child's inherent capacity and potential development. The numerical expression of these measures does not have the precision which is often accorded to it. The Stanford-Binet intelligence quotient (IQ) has a range of

normal variation of five points in either direction from the one obtained, even under the best conditions of examination. Other measures, the educational age (EA), educational quotient (EQ), and the accomplishment ratio (AR), are still more variable and subject to even greater errors of interpretation.

It is important to bear the foregoing considerations in mind when, as in the present study, these apparently exact numerical expressions of intelligence and educational measures are placed in comparison with rough descriptions of emotional and social behavior for which no practical scales of measurement have as yet been devised.[1]

Throughout the study we have described our research methods in some detail, in the belief that the details may be of value in saving time and labor for other investigators who desire to take up further research with similar case material. The present study will, we hope, be suggestive of allied problems which need investigation. There is the possibility of approach from the opposite side of the question, an investigation of the effect of educational maladjustment upon personality and behavior development.[2] Another important study would consider the effects of personality, behavior, and environmental influences upon the child's school adjustment as measured by his behavior in the classroom and his attitude toward teachers and schoolmates.

[1] The intensively continuous research programs of Blatz and Bott, the ingeniously subtle experiments on large and varied groups of children by Hartshorne and May, and studies of social maturity by others, are gradually establishing the measurement of behavior activities in everyday life where observation was formerly the only method of investigation.

W. E. Blatz and E. A. Bott, "Studies in Mental Hygiene (1) Behavior of Public School Children—A Description of Method," *Pedagogical Seminary and Journal of Genetic Psychology*, XXXIV (1927), 552–581.

Hugh Hartshorne and Mark A. May, *Studies in Deceit* (New York: The Macmillan Co., 1928).

[2] As a small beginning see Blanchard, "Reading Disabilities in Relation to Maladjustment," *Mental Hygiene*, XII (1928), 772–788.

III

Selection of Children

ONE group, of 167 children, was examined when the demonstration child guidance clinic of the National Committee for Mental Hygiene was stationed at Los Angeles in 1924. The other group, of 163 children, was studied by the demonstration child guidance clinic in Philadelphia, during the period from April 1, 1925 to July 1, 1927.

Children having intelligence quotients below 80 were excluded in order to insure that any variations in educational achievement which might appear would not be due to defective intelligence. Other cases which were omitted were preschool, kindergarten or first grade pupils, below the range of the educational tests, high school students and continuation school pupils above the test range, and those who had left school. With the exception of the children thus excluded the groups reported upon in this study included all of the children handled in the two clinics.

The children came to the clinics from various sources. A very few were sent from the Juvenile Court on charges of petty larceny, running away, truancy, incorrigibility, etc. Some were singled out by teachers because of their failure to adjust to classroom discipline. The majority, in Los Angeles, were brought by parents who learned of the clinic through newspaper publicity or lectures to clubs and parent-teachers associations. In Philadelphia nearly one-half were referred by social agencies, and only one-third by parents.

Very few of the cases in either city represented chronic behavior problems needing institutional placement, or definitely abnormal personality trends pointing to probable psychopathy. For the most part, the children selected were kept in school, receiving treatment through local physicians and the clinic. There seems to be little doubt, however, that compared to the usual run of school children, they did present more personality and behavior difficulties.

Behavior difficulties were found in 87.4 per cent of the Los Angeles and 84.0 per cent of the Philadelphia cases included in the groups studied. Haggerty, in a recent study of the incidence of undesirable behavior patterns in 800 pupils of a Minneapolis school, reports that these occur in 51 per cent more or less frequently.[1] Although the difference of community prevents us from considering these figures a perfect check for our groups, they are certainly suggestive. Moreover, Haggerty's total percentage is based on the inclusion of certain tendencies which we have considered under personality, in addition to types of behavior similar to those shown by our groups, so that our percentage of behavior difficulties is relatively much higher.[2]

We have no definite figures on the frequency of personality disorders in public school children as a whole. In our groups, the occurrence of undesirable personality traits reaches 95.8 per cent and 86.5 per cent respectively.

[1] M. E. Haggerty, "The Incidence of Undesirable Behavior in Public School Children," *Journal of Educational Research*, XII (1925), 102–122.

[2] E. K. Wickman, in his study *Children's Behavior and Teachers' Attitudes* (New York: Commonwealth Fund, Division of Publications, 1928) states that the average number of behavior deviations for the unselected school child is 8; for the problem child 18. These estimates are on a list of 51 undesirable traits, however, while our consideration is limited to a relatively small number of behavior deviations, existing in a degree of severity sufficient to make parents and teachers consider them of a serious nature.

While the children selected for study in no way approximate the serious personality and conduct disturbances to be found in institutions for the psychopathic and delinquent, they undoubtedly present a higher incidence of personality and behavior disorders than would an unselected group of school children.

It should be noted also, in discussing the make-up of the selected groups which we are studying, that there is a minimum of the types of personality and behavior deviations which are characteristic of epilepsy, post-epidemic-encephalitic states, and similar disease entities. This is a desirable condition, however, since we already know that these organic diseases are apt to interfere with processes of attention or memory to an extent which renders effect upon scholastic achievement inevitable. Therefore, in the absence of a preponderance of these cases, we avoid the introduction of factors which would be as warping in our data as would the inclusion of a large number of mentally deficient individuals. It is to be repeated that we are interested primarily in the interference with school achievement by personality deviations, behavior difficulties, physical defects, and social forces *per se*, uncomplicated by serious organic lesions or native poverty of intellectual equipment.

Approximately one-half of the children selected for the study were of American stock. In the Los Angeles and Philadelphia groups respectively, in 58.7 per cent and 41.7 per cent of the cases both parents were American-born; in 13.8 per cent and 13.6 per cent one parent was foreign-born; in 17.4 per cent and 38.0 per cent both parents were foreign-born; and in 4.8 per cent and 4.3 per cent the nativity of the parents was uncertain. In 5.3 per cent of the Los Angeles cases and 2.4 per cent of the Philadelphia cases the children were foreign-born. All the children were white,

and they came from all grades from the second to the ninth, inclusive. The distribution by grades is given in Table I.

TABLE I

DISTRIBUTION OF CHILDREN BY SCHOOL GRADES

*School grade**	*Los Angeles*	*Philadelphia*
2 L	5	5
2 H	5	9
3 L	14	13
3 H	15	14
4 L	18	11
4 H	11	17
5 L	10	15
5 H	8	12
6 L	7	15
6 H	13	8
7 L	11	11
7 H	14	9
8 L	10	7
8 H	6	9
9 L	6	2
9 H	7	2
Adjustment or disciplinary class	7	4
Total	*167*	*163*

* "L" indicates the low section of the grade, and "H" the high.

IV

Methods of Study

EACH child received a thorough clinical study, including the taking of a social history and medical, psychological[1], and psychiatric examinations.[2] The purpose of the social history is to give information concerning heredity, developmental history, health and school history, home conditions, both as to economic situation and relationships between different members of the family, methods of training and discipline used by the parents, observations as to the child's personality and conduct, an account of his interests, and a description of his play life and companions. These topics are covered by the social history in detail, with a view to showing how various situations that have arisen in the child's life may have contributed to the development of the habits, conditioned responses, emotional disturbances, and behavior patterns which characterize him at the time of the clinical study.

A physical examination is given to most of the children and it is a thorough one, including a careful inspection of heart and lungs; an estimate of the child's development in relation to the average height-weight ratio for his age; special eye, ear, nose and throat examinations; neurological study; inventory of endocrine symptomatology, and a

[1] Richard H. Paynter, "The Clinical Psychologist at Work," *The Personnel Journal*, VI (1927), 283–294.

[2] E. Van Norman Emery, "The Child Guidance Clinic," *Pacific Coast Journal of Nursing*, October, 1925. This article describes the procedure typical for both Los Angeles and Philadelphia clinics.

genito-urinary examination with urine analysis, blood Wassermann, and other laboratory tests wherever indicated.

The psychological examination includes the Stanford revision of the Binet-Simon scale; educational tests, consisting of the Stanford Achievement, Primary Examination, for children in the second and third grades, and the Otis Classification test, Part I, or the Stanford Achievement, Advanced Examination, for those in the fourth to ninth grades, inclusive; part of the group are given a modified interests analysis blank and the Woodworth-Mathews Questionnaire for emotional instability, Pintner-Paterson Performance tests, Stenquist Mechanical Assembly tests, and other special educational and vocational tests whenever indicated. In those cases which had previously been given the Stanford-Binet, this was repeated and some other form of intelligence test (Otis Classification, Part II, Multi-Mental Scale, National Intelligence test, Army Alpha, etc.) used to check the results. Children who had already had some form of educational test were given the alternate form of the Stanford Achievement or of the Otis Classification, Part I.

In most of the cases there was little discrepancy between the repetition of the Stanford-Binet and the tests used as checks, so that the intelligence quotients reported in this study are in all cases those obtained by the use of the Stanford revision. The educational quotients are based upon the relationship of the educational ages from the Stanford Achievement and Otis Classification tests to the life ages of the individuals. The accomplishment ratios represent the relationship of these educational ages to the Stanford-Binet mental age. Subject age and quotient were used as a part of the clinical study in order to provide a

better basis for educational advice, but these findings are not utilized in the present study.

The psychiatric examination seeks to get from the child his own account of his life at home, at school and at play; a description of his feelings about the different members of his family and others with whom he comes into frequent contact; his own attitudes toward the various problems which may be troubling him; indications of emotional conflict about home, school, sex matters or other sources of disturbance; feelings of inferiority and other mental mechanisms; his thoughts, feelings, interests and ambitions; his dreams, day-dreams, and ungratified wishes.[3]

[3] For an outline of topics covered, see "The Psychiatric Examination of a Child," *State Hospital Quarterly*, August, 1925. Also published in *Mental Hygiene*, X (1926), 300–306.

V

Presentation of Data

FOR purposes of clearness, the findings are first reported in separate tables giving the distribution of intelligence quotients, educational quotients, and accomplishment ratios; the placement according to life age, mental age, and educational age; and the occurrence of physical defects, personality and behavior difficulties, and bad social conditions. Comparisons of the occurrence of personality and behavior difficulties, with distribution of intelligence quotients, educational quotients, and accomplishment ratios are presented in another set of tables. The comparisons of personality and behavior difficulties with grade placement according to life, mental, and educational ages are also given in separate tables. Physical defects and bad social conditions were also tabulated in comparison with intelligence quotients, educational quotients, accomplishment ratios and grade placement for life, mental, and educational ages, but these figures are not introduced in detail for reasons explained later. We have prepared tables comparing our data with other studies which could be considered to some extent as controls. Details of the method of statistical treatment will be given in connection with the tables. An attempt to study sex differences was made, but since the numbers are so small this was not satisfactory and the tables by sex have been omitted.

While the intelligence quotient is not a measure of educational achievement, it does indicate the *capacity for achievement*, and it is therefore logical to include comparative

tables for intelligence quotient as well as for educational quotient, and accomplishment ratio. Moreover, there have been so many statements to the effect that there is a positive correlation between high intelligence and good behavior[1] that it is also interesting to include the material bearing on this question.

The 167 Los Angeles children included 118 boys and 49 girls. The intelligence quotients ranged from 80 to 154. The distribution of the intelligence quotients is given in Table II. The educational quotients ranged from 62 at

TABLE II

DISTRIBUTION OF CHILDREN BY INTELLIGENCE QUOTIENTS

Intelligence quotient	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
80– 89	34	20.2	47	28.8
90– 99	44	26.4	51	31.2
100–109	44	26.4	28	17.3
110–119	24	14.4	15	9.2
120–129	11	6.6	14	8.6
130 and over	10	6.0	8	4.9
Total	*167*	*100.0*	*163*	*100.0*
Median	100.8		96.3	
Mean	102.6		100.0	

the lower limit to 172 at the upper limit. The distribution of educational quotients is given in Table III. Table IV gives the distribution of accomplishment ratios. These ranged from 70 to 128.

[1] See Terman's statement to this effect in *Genetic Studies of Genius* (Stanford University Press, 1925), I, 638.

TABLE III

DISTRIBUTION OF CHILDREN BY EDUCATIONAL QUOTIENTS

Educational quotient	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
60– 69	2	1.2	2	1.2
70– 79	16	9.5	14	8.6
80– 89	35	21.0	41	25.2
90– 99	44	26.3	45	27.6
100–109	35	21.0	27	16.6
110–119	13	7.8	17	10.4
120–129	10	6.0	8	4.9
130 and over	12	7.2	9	5.5
Total	*167*	*100.0*	*163*	*100.0*
Median	96.4		94.9	
Mean	99.2		98.1	

TABLE IV

DISTRIBUTION OF CHILDREN BY ACCOMPLISHMENT RATIOS

Accomplishment ratio	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
70– 79	10	6.0	4	2.4
80– 89	37	22.2	28	17.2
90– 99	61	36.5	60	36.9
100–109	33	19.7	44	27.0
110–119	24	14.4	19	11.6
120 and over	2	1.2	8	4.9
Total	*167*	*100.0*	*163*	*100.0*
Median	95.5		97.8	
Mean	96.3		98.9	

Of the 163 Philadelphia cases, 120 were boys and 43 were girls. The intelligence quotients ranged from 80 to 149. The range of educational quotients was from 68 to 162. The accomplishment ratios ranged from 72 to 131.

Many of the comparisons in the following pages are based upon the distribution of intelligence quotients, educational quotients, and accomplishment ratios as below or above 100. In comparing the figures for the two cities, the distribution is as follows:

Item Compared	*Per Cent of Los Angeles Children Rating:*		*Per Cent of Philadelphia Children Rating:*	
	Below 100	*100 and Above*	*Below 100*	*100 and Above*
Intelligence quotient	46.6	53.4	60.0	40.0
Educational quotient	58.0	42.0	62.6	37.4
Accomplishment ratio	64.7	35.3	56.5	43.5

In Table V the distribution of accomplishment ratios for the Los Angeles group of children in this study is compared with the accomplishment ratio distribution for 4325 children in the Los Angeles public schools.[2] It is interesting to note that the distribution is about the same in both groups if the division is drawn between the accomplishment ratios below and above 100.[3] Of the unselected school children 66.2 per cent have accomplishment ratios below 100, as compared with 64.7 per cent of the 167 children with behavior and personality difficulties. Of the control group 33.8 per cent have accomplishment ratios above 100 and 35.3 per cent of the problem children rank above 100. The medians for the unselected group and the children

[2] The figures for the Los Angeles children are taken from a report made by W. W. Clark on "Educational Status of Los Angeles Elementary Schools," *Los Angeles School Journal*, VII (1924), 30–34.

[3] Here the comparison of the two groups of children is made on the basis of division into two classes because it is the method used in the study of cases presenting specific problems where too few cases are included to warrant more detailed analysis.

with personality and behavior difficulties are also very close—95.9 is the median for the former and 96.0 for the latter.

TABLE V

DISTRIBUTION OF 4,325 PUPILS FROM LOS ANGELES CITY SCHOOLS AND OF 167 LOS ANGELES CHILDREN WITH PERSONALITY AND BEHAVIOR DIFFICULTIES ACCORDING TO ACCOMPLISHMENT RATIOS*

Accomplishment ratio	*Los Angeles pupils*		*Clinic children*	
	Number	*Per cent*	*Number*	*Per cent*
Below 70	17	0.4	.....	.....
70– 79	169	3.9	10	6.0
80– 89	946	21.9	37	22.2
90– 99	1,732	40.0	61	36.5
100–109	1,056	24.4	33	19.7
110–119	329	7.6	24	14.4
120–129	61	1.4	2	1.2
130 and over	15	0.4	.....	.....
Total	*4,325*	*100.0*	*167*	*100.0*
Below 100	2,864	66.2	108	64.7
100 or above	1,461	33.8	59	35.3

*The chief differences between the Los Angeles group as a whole and our selected group of Los Angeles children lies in a possible variation of the intelligence quotient range and the fact that the selected group were all problem children. In our group, intelligence quotients below 80 were arbitrarily excluded, while in the pupils from the city schools used for comparative purposes there are undoubtedly some with intelligence quotients below 80. However, the possibility of inclusion of low intelligence quotients is somewhat minimized by the segregation of the mentally deficient pupils into special schools, so that very few intelligence quotients below 70 would be expected in the unselected group.

Acceleration or retardation in grade placement for life age and mental age was computed for the Los Angeles children upon the basis adopted by Terman in *The Intelli-*

gence of School Children. The average age for beginning the second grade was considered to be seven and a half, the average for beginning the third grade, eight and a half, and so on.[4] Similarly, in comparing grading in school with intellectual level, a mental age of seven and a half was considered capable of beginning second grade work, a mental age of eight and a half capable of beginning third grade work, and so forth. Since the Stanford Achievement and Otis Classification tests are prepared with a view to making the educational age comparable with life age and mental age, the same standards were used in computing the grade placement for educational age.

In the Philadelphia cases, the same method of calculating grade placement was used up to the time of publication of the revised manual of directions for the Stanford Achievement test, after which the norms for grade placement given there were adopted.[5] The two methods of calculation do not vary more than a half year from each other,[6] and the difference is frequently less. Allowance for this variation is made in the grade placement tables by considering the "at grade" group to include those within a half year above or below.

This method of computing age-grade placements is more severe than that used in any previous investigations. In the survey for age-grade retardation[7] referred to on page 19, for example, the standards used were more lenient by a year. That is, while we considered children were retarded

[4] L. M. Terman, *The Intelligence of School Children*, 93–94. Terman, *et al.*, *Intelligence Tests and School Reorganization* (Yonkers: World Book Company, 1923), 13–14.

[5] Ruch and Terman, *Stanford Achievement Test Manual of Directions* (Yonkers World Book Co., 1926), 44–47.

[6] In the ninth grade cases, the variation was greater, but here we reverted to the earlier method.

[7] Quoted from Terman, *Intelligence of School Children*, 112–114.

unless ready for the third grade at eight and a half, or nine, in these other investigations a child was not considered retarded for beginning third grade unless he was over ten years of age.

Tables VI, VII, and VIII give the data concerning grade placement for life, mental, and educational ages. Under the heading "at grade" are grouped those within a half year of the average grade for life age, mental age, or educational age. In the Los Angeles group of children, 37.7 per cent are

TABLE VI

GRADE PLACEMENT IN RELATION TO LIFE AGE

Grade placement in relation to life age	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Below grade	63	37.7	52	31.9
At grade	78	46.7	78	47.9
Above grade	17	10.2	29	17.8
Adjustment or disciplinary class	9	5.4	4	2.4
Total	*167*	*100.0*	*163*	*100.0*

TABLE VII

GRADE PLACEMENT IN RELATION TO MENTAL AGE

Grade placement in relation to mental age	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Below grade	70	41.9	56	34.4
At grade	63	37.7	67	41.1
Above grade	25	15.0	36	22.1
Adjustment or disciplinary class	9	5.4	4	2.4
Total	*167*	*100.0*	*163*	*100.0*

graded below life age, 41.9 per cent below mental age and 25.8 per cent below educational age (on the Stanford Achievement and Otis Classification tests). In the Philadelphia group, 31.9 per cent are graded below life age, 34.4 per cent below mental age, and 20.9 per cent below educational age.

TABLE VIII

GRADE PLACEMENT IN RELATION TO EDUCATIONAL AGE

Grade placement in relation to educational age	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Below grade	43	25.8	34	20.9
At grade	73	43.7	86	52.8
Above grade	42	25.1	39	23.9
Adjustment or disciplinary class	9	5.4	4	2.4
Total	*167*	*100.0*	*163*	*100.0*

These figures may be summarized in the statement that misgrading is less for life age than for either mental or educational age, but there are more children placed below mental age than educational age, and more placed above educational age than mental age.

The misgrading for life age is not much different from that for school populations in general. The amount of age-grade retardation in 318 cities surveyed by Strayer, ranges from 32 per cent to 38 per cent, although estimated on a scale more lenient by a year than our standards.[8] However, it is probable that the exclusion of mentally inferior pupils from our study tends to counterbalance the difference in methods of estimating retardation for age. Other studies[9]

[8] Given by Terman in *Intelligence of School Children*, 112.

[9] Summarized by Terman, *op. cit.*, 113–114.

show for various cities an age-grade retardation from 20.7 per cent to 43.0 per cent. In nine cities of California, the age-grade retardation runs from 16.9 per cent for Berkeley to 39.9 per cent in San Jose.[10] On the whole, there may be a slight tendency toward an undue amount of age-grade retardation in the children in our two groups.

It is more difficult to find data for comparison in the fields of grade placement for mental and educational ages. There is a dearth of such studies in the literature on mental and educational measurement, although it is generally recognized that there is as much misgrading for mental age as for life age. Terman's studies of gifted children show that so far as the very superior group is concerned, there is more retardation in school for mental age and educational achievement than for life age. Terman reports that 85 per cent of his gifted group are accelerated for life age and not one is retarded, while approximately 99 per cent are graded below mental age,[11] and the average gifted child is graded 26 per cent below his educational achievement on the Stanford Achievement test.[12]

It is sometimes difficult to distinguish between personality and behavior difficulties as most of the personality traits described are visible through the behavior patterns which the individual displays. The division consistently adhered to in these studies is efficient clinically and therefore has practical value. For the most part, the characteristics listed under the heading of personality are those which primarily affect the individual and his own personal adjustments; they are the types of reactions which, carried to the extreme, are found in patients suffering from nervous and mental diseases. On the other hand, they may persist in

[10] *Educational Research Bulletin Pasadena City Schools*, II (1923), 7.

[11] Terman, *Genetic Studies of Genius*, I, 253.

[12] *Ibid.*, 306.

a mild form in individuals throughout life without greatly impairing economic and social efficiency, although often a source of personal unhappiness.

The behavior difficulties listed are, with a few exceptions, those which interfere definitely with the individual's adjustment to the regulations of organized society. The minor behavior patterns included in this group—speech difficulties, disobedience, enuresis, temper tantrums—also interfere with social adjustments in that they bring ridicule or censure upon the individual. Just as some of the personality traits hint at the possibility of a later psychopathic condition, so do certain of the behavior patterns suggest the development of delinquent trends if they become chronic habits.

All problems were pooled into either behavior disorders or personality difficulties regardless of the degree of seriousness. In the present state of our knowledge and practice, it is hardly possible to evaluate personality and behavior difficulties with regard to their seriousness for the individual child. Sometimes one and sometimes the other seems to be the chief factor in maladjustment, both in childhood and adult life. Intensity or duration of one as compared with the other, as well as the external situation and other circumstances apparently help to decide this matter.

The occurrence of personality difficulties is given in Table IX. Definitions of terms may clarify the classification. Mental conflict is used in the rather broad sense adopted by Healy[13] to mean emotional disturbance centering around some situation in the child's life. Conflicting emotions are felt toward this situation. For example, if the mental conflict is about sex experience, it involves a conflict between

[13] William Healy, *The Individual Delinquent* (Boston: Little, Brown & Co., 1920), 236.
William Healy, *Mental Conflict and Misconduct* (Boston: Little, Brown & Co., 1923).

the desire to repeat the experience and the wish to avoid this repetition. Or, if the conflict is about the home situation, it may be considered to depend largely upon ambivalence of emotion, the feelings toward the parent fluctuating between love and hate.[14]

TABLE IX

DISTRIBUTION OF CHILDREN ACCORDING TO PERSONALITY DIFFICULTIES

*Personality difficulty**	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Mental conflict	75	44.9	36	22.1
Hyperactive	38	22.8	17	10.5
Inferiority feelings	32	19.1	88	54.0
Emotional	26	15.6	6	3.7
Inadequate	24	14.4	12	7.4
Fearful	22	13.2	24	14.7
Emotionally unstable	16	9.6	9	5.5
Day-dreaming	14	8.4	28	17.2
Adolescent instability	13	7.8	10	6.1
Functional nervous disease	13	7.8	5	3.0
Egocentric	10	6.0	3	1.8
Seclusive	9	5.4	9	5.3
Neurotic	5	3.0	13	7.9

* In addition to these personality difficulties, some cases of the following were present: epileptic, jealous, over-anxious, over-imaginative, parent complex, sensitive, subject to nightmares, suggestible, under-active.

It seems hardly necessary to define hyperactive, which is more or less self-explanatory. Briefly, we may say that the hyperactive child is restless, inattentive, constantly talking, never quiet, always "on the go." These are the symptoms which appear in an exaggerated form in the manic phase

[14] William Burnham, *The Normal Mind* (New York: D. Appleton & Co., 1924), 541.

Cyril Burt, *The Young Delinquent* (New York: D. Appleton & Co., 1925), 529.

of manic-depressive psychosis. It is, of course, necessary to distinguish between the normal activity and restlessness of the healthy child, and the abnormal degree which may be considered as hyperactivity.

Inferiority feelings arise from a sense of insecurity and inability to compete with playmates, other members of the family, or environmental situations. The feeling of inferiority may be associated with physical, mental, or social status. For example, a physically delicate child may develop a feeling of inferiority because he is unable to hold his own with his companions on the playground; a dull child may feel inferior to a brilliant brother or sister with whom he is constantly being unfavorably compared; a poorly dressed child with a small allowance, if placed in a school where all his classmates are distinctly children of wealth, may feel inferior socially. Sometimes the feeling of inferiority is manifested rather openly in attitudes of self-depreciation, lack of self-confidence, and conviction of complete failure. In many more instances, the feeling of inferiority is compensated for by striving to obtain superiority. If superiority can be achieved in a wholesome way, through the development of physical prowess, or of some particular intellectual gift, the child usually becomes fairly well-adjusted. But in clinical studies, there are many cases in which the compensation takes unwholesome forms, such as bullying smaller children, boastfulness, stealing to obtain possessions which will place the individual on a basis of social equality with his companions, etc.[15]

The inadequate person is recognized largely by his general reactions to situations,—his inability to react to

[15] Alfred Adler, "The Feeling of Inferiority, and the Striving for Recognition," *Internationale Zeitschrift für Individual Psychologie*, V, 1 (Jan.-Feb., 1927), 12–18.

John B. Morgan, *The Psychology of the Unadjusted School Child* (New York: Macmillan, 1924), chap. xi.

all implications of the situation-complex, his poor insight and apperception, the dulling of his intellectual and emotional responses. He is, as the term implies, inadequate in his reactions to the demands made upon him. This term is probably the most vaguely defined of any of the personality deviations listed in Table IX. Its clarity is particularly obscured by the use of the word "inadequate" as a synonym for "inferior," in some texts.[16]

Another nice distinction is to be made between the classifications emotional, emotionally unstable, and adolescent instability. The emotional child is one whose emotional responses are very easily produced. He cries readily, is quick-tempered, and his feelings are often hurt. When the ease of emotional response is so great that the reactions may be set off by inappropriate stimuli or are exaggerated out of all proportion to the external situation, the person is considered emotionally unstable. Emotionally unstable children are impulsive, erratic, and apparently quite unable to exert control over their emotional responses. Adolescent instability is a temporary emotional instability during the adolescent period.[17]

The egocentric child is characterized by the traits of selfishness, aggressiveness, cruelty, and self-assertion to a marked degree. He is lacking in sympathy, never admits that he is in error, but projects the blame on his associates.[18] The seclusive personality is shy, timid, lonely. It is expressed in withdrawal from social relationships and from reality. The seclusive child remains by himself instead of joining in the play of other children; he is aloof and wrapped in his own thoughts and fancies. In its extreme form, the seclusive

[16] Alfred Adler, *op. cit.*, 14.

[17] Healy, *The Individual Delinquent*, 336.
Sands and Blanchard, *Abnormal Behavior*, (New York: Dodd, Mead, 1923), 50.

[18] Sands and Blanchard, *op. cit.*, 155.

personality is typical of the mental disease known as dementia praecox.[19] The neurotics are those indecisive, fearful, constantly complaining individuals who are subject to the phobias, night terrors, and all the other symptoms which are popularly called "nervous."[20] The leading functional nervous disease includes hysteria, psychoneurosis, and other diseases which are thus classified in texts in psychiatry. The other classifications in Table IX, day-dreaming, fearful, parent complex, jealousy, are self-explanatory.

We note from Table IX certain differences as to the personality difficulties reported for the two groups of children. In the Los Angeles cases, the difficulty of highest incidence is mental conflict, which appears in 44.9 per cent of the total number. In the Philadelphia group, inferiority feelings (54.0 per cent) are of greatest frequency. Mental conflict is found in only 22.1 per cent of the Philadelphia cases, and inferiority feelings in only 19.1 per cent of those from Los Angeles. While 22.8 per cent of the Los Angeles children are described as hyperactive, only 10.5 per cent are thus classified for Philadelphia. In fact, in so far as the same headings appear, only fearful, seclusive and adolescent instability occur about as frequently in one group as in the other.

It should be noted, however, that although such striking differences appear in respect to particular personality deviations in Table IX, the total number of personality difficulties tabulated is very nearly the same for Los Angeles and Philadelphia.

Table X gives the occurrence of behavior difficulties. It will be noted that in both the Los Angeles and Philadelphia groups, stealing and lying are the two conduct

[19] Sands and Blanchard, *op. cit.*, 146.

[20] *Ibid.*, 151.

disorders of highest incidence. The third place is held by sex experiences for the Los Angeles children, and by truancy for those in Philadelphia. Truancy and disobedience tie for the fourth place in the Los Angeles group, but temper tantrums is fourth in frequency for Philadelphia, while disobedience is fifth. From this point, the two tables continue to show marked divergence. In some instances, this is due

TABLE X

DISTRIBUTION OF CHILDREN ACCORDING TO BEHAVIOR DIFFICULTIES

*Behavior difficulty**	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Stealing	61	36.5	63	38.7
Lying	48	28.7	61	37.4
Sex experiences	39	23.4	16	9.8
Truancy	36	21.6	46	28.2
Disobedience	36	21.6	32	19.7
Running away	30	17.9	26	16.0
Speech defects	24	14.4	3	1.8
Enuresis	23	13.8	14	8.5
Temper tantrums	21	12.6	44	27.0
Fighting	13	7.8	21	12.9
†Bullying	..	....	26	16.0

* In addition to these behavior difficulties, some cases of the following were present: begging, breaking windows, chewing tobacco, cutting up clothing, fæcal soiling, gambling, habit spasms, incendiarism, obscene language, profanity, shooting crap, smoking, somnambulism, suicidal attempts.

† This item was not tabulated for the Los Angeles cases.

to differences in the selection of the cases in the two cities. The number of girls with sex experience, for example, was inflated in the Los Angeles clinic because a greater number of these cases were referred from the Juvenile Court, while in Philadelphia children referred because of speech defects were transferred to the speech clinic of the Department of

Special Education in the public schools. Again, that more temper tantrums are to be found in the Philadelphia group is to be explained by the fact that this contains a larger number of young children than the Los Angeles group. Here, again, despite differences in the incidence of specific behavior difficulties, the total numbers for Los Angeles and Philadelphia are similar.

In considering the figures as to personality and behavior difficulties, it should be noted that there is much overlapping within each table and between the two tables. That is, the same child may have more than one personality difficulty, and personality and behavior difficulties are frequently found in the same case. Also, many children present more than one type of behavior difficulty. Of all the Los Angeles children 95.8 per cent present personality difficulties and 87.4 per cent show behavior difficulties. Personality difficulties alone occur in only 12.6 per cent of these cases, behavior alone in 4.2 per cent. Personality and behavior difficulties occur concomitantly in 83.2 per cent of the children. This gives an indication of the extent to which the personality difficulties are associated with behavior disorders, personality and behavior difficulties appearing in combination about six and one-half times as frequently as personality difficulties alone and about twenty times as frequently as behavior difficulties alone. (See Table XI.)

Of the total number of Philadelphia children, personality difficulties alone are found in 16.0 per cent; behavior difficulties alone in 13.5 per cent, but personality and behavior difficulties occur together in 70.5 per cent. Here personality and behavior difficulties in combination appear about four and one-third times as frequently as personality difficulties alone, and over five times as frequently as behavior difficulties alone.

TABLE XI

DISTRIBUTION OF CHILDREN ACCORDING TO OCCURRENCE OF PERSONALITY AND BEHAVIOR DIFFICULTIES

Nature of difficulty	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Both personality and behavior	139	83.2	115	70.5
Personality only	21	12.6	26	16.0
Behavior only	7	4.2	22	13.5
Total	*167*	*100.0*	*163*	*100.0*

TABLE XII

DISTRIBUTION OF CHILDREN ACCORDING TO UNDESIRABLE PHYSICAL CONDITIONS

Physical condition	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent**
Nose and throat conditions	69	41.3	77	47.3
Undernourished	66	39.6	47	28.8
Dental defects or diseases	44	26.4	75	46.0
Eye defects or diseases	45	26.9	55	33.8
Defects of posture	41	24.5	45	27.6
Endocrine symptomatology	33	19.7	15	9.2
Cardiac conditions	22	13.2	8	4.9
Overweight	21	12.6	12	7.3
Defects or diseases of ear	11	6.6	22	13.5
Pulmonary conditions (T. B.)	9	5.4	4	2.4
Anæmia	9	5.4	3	1.8
Precocious sex development	9	5.4	1	.6
No physical defects	8	4.7	16	9.8
Not examined	..	....	5	3.0

* The five cases under "not examined" are included in figuring these per cents.

The data concerning physical conditions are given in Table XII. For the Los Angeles children, nose and throat conditions head the list (41.3 per cent) and poor nutrition (39.6 per cent) is second in frequency of occurrence. Cardiac conditions, endocrine symptomatology, defects of posture, eye defects or diseases, and dental defects or diseases, occur in from 13 per cent to 27 per cent of the children.

In the Philadelphia group, while nose and throat conditions are most frequent (47.3 per cent), the second place is held by dental defects and diseases (46.0 per cent), while poor nutrition is found less frequently (28.8 per cent). Eye defects and diseases appear in 33.8 per cent and defects of posture in 27.6 per cent of the Philadelphia cases, while cardiac diseases occur in only 4.9 per cent and endocrine symptoms in only 9.2 per cent. Ear conditions are reported for 13.5 per cent of the Philadelphia but only for 6.6 per cent of the Los Angeles children.

Apparently, our children with personality and behavior difficulties show no undue number of physical defects. An interesting comparison may be made between the physical conditions found in our Los Angeles group and those reported by Terman on the 281 children of Los Angeles County who were given physical examinations as a part of his study of gifted children. The children studied by Terman are not only of superior intelligence but also of superior educational achievement, according to their scores on the Stanford Achievement test. Terman states that "the accomplishment quotients of the gifted in the various school subjects tend to run from three-fourths to four-fifths as far above the average as do the intelligence quotients."[21] The physical conditions comparable with those found in our group are given in Table XIII, the percentages in this

[21] Terman, *Genetic Studies of Genius*, 305.

table being taken from Chapter IX of *Genetic Studies of Genius*, Vol. I. It appears from a comparison of Tables XII and XIII that with a few exceptions the group of gifted children present physical defects in as great or greater frequency than the Los Angeles group of children with personality and behavior difficulties. Only cardiac conditions and anæmia appear with much greater frequency in the problem children than in the gifted.

TABLE XIII

PHYSICAL CONDITIONS IN *281* GIFTED CHILDREN OF LOS ANGELES COUNTY

(Compiled from Terman's *Genetic Studies of Genius*, Vol. I, chap. ix)

Physical condition	*Per cent*		
	Boys	*Girls*	*Total**
Nose and throat conditions:			
Adenoids	3.6	5.6	....
Enlarged or cryptic tonsils	34.5	50.7	....
Nasal obstructions	....	....	3.9
Underweight	31.0	34.0	....
Cavities of teeth	75.0†	66.0†	....
Vision defects (10/20 or less)	29.5	14.8	....
Diseases of eye	....	....	6.2
Defects of posture	57.5	38.8	....
Endocrine symptomatology:			
Hyperthyroidism	7.2	6.3	....
Other endocrine symptoms	10.0	11.3	....
Cardiac conditions	....	....	4.3
Overweight	29.0	35.0	....
Defective hearing	12.2	19.7	....
Pulmonary conditions	....	....	3.2
Anæmia (Hemoglobin test below 75)	1.4	0.7	....

* Totals are entered when the per cents for the sexes are not available.
† Approximate.

There is, of course, a source of error in making comparisons between medical examinations by different physicians. As Terman states "On some of the points . . . one highly competent examiner will report several times as many cases of defect as another of equal competence. Medical examination methods are less objective than those customarily employed by psychologists in psychometrics."[22] The competency of the physicians making the examinations in the case of our group of problem children cannot be questioned, as they were well-trained pediatricians.

Table XIV presents the data with respect to pertinent social conditions. While the Los Angeles children came very largely from homes where the economic circumstances were good and the parents well-educated, the cases for the Philadelphia clinic were drawn from all kinds of social strata, from families which were depending upon the aid of charitable organizations to those of the well-to-do patrons of private schools. Because of these facts, we may expect to find, as we do, that poverty, broken homes, alcoholic and delinquent parents, institutional life, and illegitimacy are found more often in the Philadelphia cases. Moreover, these are the situations which are handled by the family case work agencies and placement bureaus by which nearly one-half of the children in the Philadelphia group were brought to the clinic. It is probably due also to the large number of children from congested districts in the Philadelphia group, that inadequate and improper recreation is found so much more frequently than in the Los Angeles cases. The foreign home—in the sense that old world languages and customs are maintained by parents—is more prevalent in the Philadelphia group, but this is also to be expected since only 22.7 per cent of the Los Angeles children

[22] Terman, *Genetic Studies of Genius*, p. 250.

as compared to 40.4 per cent of the Philadelphia children came from families in which both father and mother were of foreign birth. Differences in social strata, however, seem to have little effect upon such factors as poor training and discipline (which includes over-protection, inconsistency, harshness or laxity of parental control, etc.), parental disharmony and undesirable companions, which are of about the same frequency in the two groups of children. On the whole, the Philadelphia children are subjected to a far larger number of undesirable social conditions than those in Los Angeles.

TABLE XIV

FREQUENCY OF UNDESIRABLE SOCIAL CONDITIONS

Social condition	*Los Angeles*		*Philadelphia*	
	Number	*Per cent*	*Number*	*Per cent*
Poor training and discipline	146	87.4	151	92.7
Poor heredity*	79	47.3	66	40.5
Recreation lacking or improper	54	32.4	112	68.7
Broken home	49	29.3	78	47.9
Undesirable companions	46	27.5	63	38.7
Parental disharmony	21	12.6	22	13.5
Poverty	19	11.8	62	38.0
Neurotic or psychotic parent*	18	10.8	65	39.9
Foster home	10	6.0	11	6.7
Foreign home	7	4.2	21	12.9
Overwork	4	2.4	2	1.2
Alcoholic parent†	...	....	33	20.3
Delinquent sibling	...	....	23	14.1
Delinquent parent	...	....	22	13.5
Institutional life	...	....	13	7.9
Illegitimate child	...	....	6	3.6

* The items "poor heredity" and "neurotic or psychotic parent," while perhaps applying to biological influences rather than to social situations, are included in this table for comparative purposes.

† This item and those following were not tabulated in the Los Angeles cases.

In order to show whether there is any direct relation between poor educational achievement and specific personality

TABLE XV

PERSONALITY DIFFICULTIES IN RELATION TO INTELLIGENCE QUOTIENT, EDUCATIONAL QUOTIENT, AND ACCOMPLISHMENT RATIO*

Personality difficulty	*Los Angeles*				*Philadelphia*			
	Rated below 100		*Rated 100 or above*		*Rated below 100*		*Rated 100 or above*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
INTELLIGENCE QUOTIENT								
Total children in group	*78*	*46.6*	*89*	*53.4*	*98*	*60.0*	*65*	*40.0*
Mental conflict	36	48.0	39	52.0	23	63.9	13	36.1
Hyperactive	18	47.3	20	52.7	†	....	†	....
Inferiority feelings	18	56.2	14	43.8	51	58.0	37	42.0
Emotional	8	30.8	18	69.2	†	....	†	....
Inadequate	20	83.4	4	16.6	†	....	†	....
Fearful	10	45.5	12	54.5	14	58.4	10	41.6
Day-dreaming	†	....	...	....	14	50.0	14	50.0
EDUCATIONAL QUOTIENT								
Total children in group	*97*	*58.0*	*70*	*42.0*	*102*	*62.6*	*61*	*37.4*
Mental conflict	43	57.3	32	42.7	21	58.4	15	41.6
Hyperactive	23	60.6	15	39.4	†	....	†	....
Inferiority feelings	27	84.3	5	15.7	52	59.0	36	41.0
Emotional	11	42.3	15	57.7	†	....	†	....
Inadequate	21	87.5	3	12.5	†	....	†	....
Fearful	10	45.5	12	54.5	14	58.4	10	41.6
Day-dreaming	†	....	†	....	19	67.9	9	32.1
ACCOMPLISHMENT RATIO								
Total children in group	*108*	*64.7*	*59*	*35.3*	*92*	*56.5*	*71*	*43.5*
Mental conflict	46	61.3	29	38.7	22	61.2	14	38.8
Hyperactive	24	63.1	14	36.9	10	58.9	7	41.1
Inferiority feelings	26	81.3	6	18.7	46	52.3	42	47.7
Emotional	17	65.4	9	34.6	†	....	†	....
Inadequate	16	66.7	8	33.3	†	....	†	....
Fearful	13	59.0	9	41.0	15	62.5	9	37.5
Day-dreaming	†	....	†	....	21	75.0	7	25.0

* The comparisons in this table are between the percentages indicated at the beginning of the group and the figures which follow in the respective instances. While these initial percentages are based on the whole number of children having ratings below 100 and 100 or above, the percentages that follow are simply for the children having the particular type of difficulty indicated. That is, 46.6% of all the Los Angeles children have intelligence quotients below, and 53.4% have intelligence quotients above 100. Of the children showing mental conflicts 48.0% fell in the below 100 group and 52.0% above.

† Indicates that there were too few cases to warrant classification into the two groups.

or behavior deviations, comparisons were made of the ratings according to intelligence quotients, educational quotients,

TABLE XVI

BEHAVIOR DIFFICULTIES IN RELATION TO INTELLIGENCE QUOTIENT, EDUCATIONAL QUOTIENT, AND ACCOMPLISHMENT RATIO

Behavior difficulty	*Los Angeles*				*Philadelphia*			
	Rated below 100		*Rated 100 or above*		*Rated below 100*		*Rated 100 or above*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
INTELLIGENCE QUOTIENT								
Total children in group	*78*	*46.6*	*89*	*53.4*	*98*	*60.0*	*65*	*40.0*
Stealing	34	55.8	27	44.2	40	63.5	23	36.5
Lying	22	45.8	26	54.2	41	67.2	20	32.8
Sex experiences	18	46.1	21	53.9	*	....	*	....
Truancy	15	41.6	21	58.4	31	67.4	15	32.6
Disobedience	16	44.5	20	55.5	14	43.8	18	56.3
Running away	12	40.0	18	60.0	17	65.4	9	34.6
Speech defects	12	50.0	12	50.0	*	....	*	....
Temper tantrums	*	....	*	....	26	59.0	18	41.0
Bullying†	...	....	...	....	15	57.6	11	42.4
EDUCATIONAL QUOTIENT								
Total children in group	*97*	*58.0*	*70*	*42.0*	*102*	*62.6*	*61*	*37.4*
Stealing	40	65.5	21	34.5	43	68.2	20	31.8
Lying	28	58.3	20	41.7	44	72.1	17	27.9
Sex experiences	22	56.4	17	43.6	*	....	*	....
Truancy	24	66.7	12	33.3	33	71.8	13	28.2
Disobedience	20	55.6	16	44.4	19	59.3	13	40.7
Running away	17	56.6	13	43.4	19	73.0	7	27.0
Speech defects	17	70.8	7	29.2	*	....	*	....
Temper tantrums	*	....	*	....	26	59.0	18	41.0
Bullying†	...	....	...	....	17	65.4	9	34.6
ACCOMPLISHMENT RATIO								
Total children in group	*108*	*64.7*	*59*	*35.3*	*92*	*56.5*	*71*	*43.5*
Stealing	42	67.8	19	32.2	28	44.5	35	55.5
Lying	35	73.0	13	27.0	37	60.7	24	39.3
Sex experiences	23	59.0	16	41.0	*	....	*	....
Truancy	26	72.2	10	27.8	30	65.2	16	34.8
Disobedience	20	55.5	16	44.5	21	65.7	11	34.3
Running away	18	60.0	12	40.0	14	53.9	12	46.1
Speech defects	15	62.5	9	37.5	...	....	...	....
Temper tantrums	*	....	*	....	24	54.6	20	45.4
Bullying†	...	....	...	....	15	57.6	11	42.4

* Indicates that there were too few cases to warrant classification into the two groups.

† Not tabulated in the Los Angeles cases.

and accomplishment ratios of the Los Angeles and Philadelphia children with the most frequently occurring personality and behavior difficulties. These comparisons are presented in Tables XV and XVI. The children with each specific personality or behavior difficulty were classified in two groups, those with ratings below 100 in the measure considered and those with ratings of 100 or above. The proportions of children with each difficulty in these two classifications were then compared with the proportions of the total group of children in the corresponding classifications. A statistical test[23] was applied to determine the reliability of the differences between the various specific difficulty groups and the total group in the proportions of cases rating below 100 and 100 or above. The test indicates whether the conditions found in these small groups of cases represent general tendencies. The same personality and behavior difficulties were compared in like manner with grade placement for life, mental, and educational ages. These comparisons are shown in Appendix Tables A, B, C, D, E, and F.

The comparison between personality difficulties and intelligence quotients is shown in Table XV. It will be noted that intelligence quotients below 100 occurred in 83.4 per

[23] The differences between the percentages in the following tables were subjected to a statistical test for reliability in which the standard deviation of the difference between the two percentages was calculated by the formula

$$\text{S.D. difference} = \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$$

in which p_1 and p_2 are the two percentages compared, q_1 and q_2 are the respective differences obtained by subtracting the two percentages from 1 (or 100 per cent), and n_1 and n_2 are the numbers of cases on which the percentages were based.

A difference greater than twice the standard deviation of the difference was regarded as *probably significant;* a difference greater than three times the standard deviation was regarded as *almost certainly significant*; a difference less than twice the standard deviation was regarded as of *very doubtful significance.*

cent of all the Los Angeles children who showed an inadequate personality make-up as compared with the 46.6 per cent of the total group who had intelligence quotients below 100. When the statistical test for reliability is applied to the difference between the two percentages it is found to are of almost certain significance.

Table XV also shows the distribution of the personality difficulties by educational quotients below and above 100. Here it appears that a larger proportion of children with both inferiority feelings and inadequate personalities have EQs below 100; while only 58.0 per cent of all the children have EQs below 100, 84.3 of those showing feelings of inferiority and 87.5 per cent of those with inadequate personalities are in this EQ grouping. These percentages are of almost certain significance.

The Philadelphia children with inferiority feelings are fairly evenly divided in proportion to the EQs above and below 100, and the findings for the two groups are not in harmony on this point.

There are certain other noticeably large differences between figures in this section of Table XV which by inspection appear to show differences between the total group and those with specific personality difficulties, but which do not prove to be statistically significant. The findings are suggestive but definite conclusions cannot be drawn from them because of the small number of cases included in the groups compared.

Table XV also shows a comparison between personality difficulties and accomplishment ratios below and above 100. In the Los Angeles cases, the large proportion of children with feelings of inferiority who had ARs below 100 is the only significant finding. The 81.3 per cent of children with

inferiority feelings who rated below 100 AR is of probable significance.

On the other hand the Philadelphia children with inferiority feelings are fairly proportionately distributed for ARs above and below 100.[24] The 75.0 per cent of day-dreaming cases below 100 AR is probably significant, however.

The comparison of specific personality difficulties with intelligence quotient, educational quotient, and accomplishment ratio ratings, brings out the following points:

1. Inadequate personalities, in the Los Angeles cases, occur more frequently with intelligence quotients and educational quotients below 100; less frequently with IQs and EQs above 100. Inadequacy is fairly proportionately distributed for accomplishment ratios below and above 100 in both groups, however.

2. In the Los Angeles group, feelings of inferiority occur most frequently with educational quotients and accomplishment ratios below 100, but in the Philadelphia group, there is no similar relationship between inferiority feeling and EQs and ARs below 100.

3. Daydreaming occurs most frequently in conjunction with accomplishment ratios below 100 in the Philadelphia group.

4. Other personality difficulties, mental conflicts, hyperactivity, emotional personality make-up, and fearfulness,—occur fairly proportionately with intelligence quotients, educational quotients, and accomplishment ratios below and above 100.

The comparison of specific behavior difficulties with intelligence quotients, educational quotients and accomplishment ratio ratings in Table XVI brings out the following points:

[24] It should be noted that there is a great difference in the numbers of cases of this type in the two groups.

1. The different types of behavior difficulties are proportionately distributed with intelligence quotients below and above 100.

2. In the case of educational quotients, truancy and speech defects (in the Los Angeles cases) and lying, truancy, and running away (in the Philadelphia cases) occur more frequently below 100, but these differences in occurrence are not large enough to show significance when tested for reliability.

3. The other behavior deviations are divided proportionately with the educational quotients below and above 100.

4. Lying and truancy appear superficially to occur more frequently with accomplishment ratios below 100 and less frequently with accomplishment ratios above 100 but these percentages are not significant when tested for validity.

5. The other behavior difficulties are proportionately distributed with ARs below and above 100.

Thus, in so far as shown by the educational quotients and accomplishment ratios, the data would indicate that educational achievement remains comparatively unaffected, in general, by any specific behavior difficulties. It is also of interest to note that in these children, there is no correlation between intelligence levels and presence or absence of behavior difficulties.

Comparisons between types of personality and behavior difficulties with respect to grade placement for life, mental, and educational ages bring out almost no significant interrelations. Appendix Table A gives data as to the specific personality difficulties in children placed below grade, at grade, and above grade for life age. While at first glance certain figures are suggestive, the statistical test shows they are of doubtful or no reliability. Only the entire absence of inadequate personalities above grade in the Los Angeles

group proves to be of almost certain significance. However, it will be recalled that in Table XV, for this same group a close association was observed between inadequacy and low intelligence quotient. This raises the question as to whether the inadequate personality or the dull intelligence is the basic factor in these inadequate pupils all being placed at or below grade for life age.

Appendix Table B gives the placement for mental age. Although inspection indicates a large percentage below grade of mental conflicts and feelings of inferiority for both groups and of hyperactive and emotional for the Los Angeles cases, these figures are not statistically significant. Appendix Table C, which shows the distribution of personality difficulties according to grade placement for educational age, is also without any significant implications, when tested. So far as this comparative material can show, there is no particular relationship between the existence of any type of personality difficulty and the placement for life, mental, or educational age.

A study of the distribution of behavior difficulties with grade placement for life age, mental age, and educational age, gives somewhat more positive findings. The comparative data in this field are presented in detail in Appendix Tables D, E, and F. In Appendix Table D the 51.7 per cent of the Los Angeles children who steal and who are graded below life age is, according to the statistical test, a figure of almost certain significance. Likewise, for the Los Angeles group the 42.5 per cent of truants graded below life age is significant by the statistical test, and so is the 46.5 per cent representative of children below grade who run away (the findings in respect to the latter figure may be colored by the preceding, since a large percentage of the children who run away from home also play truant from school). The 50

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per cent below grade who are listed as having had sex experience is a figure of probable significance.

On the other hand, although in conjunction with mental age-grade retardation the figures for these same behavior difficulties and also for lying and disobedience appear by inspection of Appendix Table E (Los Angeles group) to be meaningful, by the statistical test they are found to be of doubtful or no significance. There is obviously no undue amount of retardation or acceleration in relation to the educational age for any of the behavior traits shown by the Los Angeles children.

Among the Philadelphia cases, while only 32.7 per cent of the total number show age-grade retardation, 43.2 per cent of the truancy and 48.0 per cent of the running away cases are below grade for life age. (Appendix Table D.) When these figures are subjected to the statistical test, however, they prove to be very doubtful. The 24.6 per cent of stealing cases below grade for mental age seems markedly small, (Appendix Table E) and also cases of lying and truancy appear to be somewhat infrequent below grade for educational age (Appendix Table F) but these differences are of doubtful validity.

Thus from the data comparing behavior difficulties with grade placement, the only significant findings are the predominance of stealing, truancy, running away, and sex experiences among cases below grade for life age in the Los Angeles group. The Philadelphia findings for truancy and running away are doubtful, and the number of cases is not large enough to justify drawing statistical conclusions. So far as mental age and educational age placement are concerned, there are no significant findings for either the Los Angeles or the Philadelphia group of cases. There is, therefore, little indication that the school progress

of these children has been retarded by their behavior difficulties.

Thus our comparative studies of personality and behavior difficulties with the intelligence, educational achievement, and school placement of the children have been largely without positive findings. Certainly, the instances in which the statistical relationships appeared to have some positive significance were too few and too inconsistent to permit of any emphasis being attached to them. Were a summarization of the results so far reported to be made, we could only say that we have found practically no evidence that personality and behavior difficulties of any specific type interfere with the educational accomplishment of the child. The only exceptions to this statement would be in the case of feelings of inferiority and inadequacy, which did appear in conjunction with low ratings on intelligence and educational tests, and of certain behavior difficulties which were associated with grading below life age. But this is true only for the Los Angeles cases. Among the Philadelphia children day-dreaming was the only personality difficulty which was associated with low ratings.

Tables were also prepared for both Los Angeles and Philadelphia showing the comparative data for physical and social conditions in occurrence with different levels of intelligence, educational achievement, and grade placement. In all of these, there were no positive findings, so that it is not considered advantageous to reproduce these statistical formulations. Exactly the same methods of procedure were followed as in the construction of the tables already given, a methodology which has been illustrated profusely. We may therefore simply summarize the further results of the study by saying that physical defects or social conditions of the children did not lower their educational achievement as measured either by tests or by school progress.

VI

Discussion of Methods

IF we could have obtained and studied data as to personality, behavior, physical conditions, and social situations for an unselected group of children and compared these data with their educational achievement, as we did in our problem group, we might find differences between such a control group and our problem group. It would be, however, a difficult matter to secure analogous information for an ordinary group of school children. Certainly it cannot be done through the routine of a clinic, which usually cannot even offer services adequate for the whole number of problem children who stand in need of assistance. The child guidance clinic, from pressure of work, exists as a practical organization, with research as a secondary purpose. But in the interest of science and the better understanding of problems in childhood adjustment which clinics are constantly called upon to solve, it would be highly desirable if some research workers could undertake an adequate study along these lines.[1]

Another consideration which must be kept in mind is the small number of cases. Despite the fact that the cases represented three years of work by the staffs of the Los Angeles and Philadelphia clinics, the intensive nature of the study and treatment coupled with the bases for the selection of cases for this study, made the number

[1] There are some highly specialized studies endowed and under way at present, but these, so far as known, do not include sufficiently comprehensive surveys of social conditions, everyday behavior, etc., to furnish data comparable with our clinic material.

somewhat small as far as statistical treatment of data is concerned.

An outstanding difficulty in the statistical treatment of the material at our disposal is the aspect of overlapping of traits. In Table XI, the extent to which personality and behavior difficulties overlap, that is, occur in the same individuals, is shown very clearly. But the overlapping is far more complicated than this. It is not only that the same individual possesses simultaneously deviations of personality and behavior (many times several personality traits and more than one type of misconduct being involved), but also that the various physical conditions and social factors are co-existent with these. For example, in listing the number of cases of truancy, we are not really considering the effect of this behavior pattern alone, for in addition to truancy, the child may show overactivity, feelings of inferiority, lying, stealing, or any other combination of personality and behavior reactions; moreover the same child may be suffering from visual defect, malnutrition, or any other physical handicap, and also be subjected to environmental stresses in the form of poor training and discipline, bad companions, insufficient recreational opportunities or other unfavorable situations. For this reason, it is difficult to evaluate with accuracy the meaning of any one particular item, since we must conceive of each one as reinforced by all the others concomitant with it.

When we consider the nature of the individual case studies from which our statistical data are drawn, certain other aspects must be taken into account. For example, the tests which have been devised for the measurement of intelligence and educational achievement are by no means perfected instruments.[2] Although the type of intelligence which is

[2] Thorndike indicates the necessity for further work in this field when he writes: "In spite of the notable improvements during the last 20 years, existing instruments

evaluated by the Stanford-Binet is that which usually correlates most highly with capacity for school accomplishment, other qualities are necessary for scholastic success besides those which may be investigated by this test. By its use, we can obtain a mental age and intelligence quotient rating, and also an inventory of such intellectual factors as memory span, vocabulary, comprehension, reasoning, associative powers, etc. Recent investigations, however, have indicated that traits such as speed and flexibility of reaction, assurance, perseverance, care for detail, quickness of decision, are also important for success in school work.[3] It may be that the presence or absence of these motor patterns, intellectual attitudes and character qualities are very influential in determining educational achievement.

In using such measures as the intelligence quotient, educational quotient, and accomplishment ratio we are confronted with numerical relationships which are subject to many influences, and therefore are more or less fluctuating. Achievement upon educational tests particularly is affected by choice of textbooks and teaching methods, cultural background of the home, grade placement, and many other external conditions. Children in the same school grade but in schools employing different pedagogical methods will

for measuring intelligence suffer from serious deficiencies. Just what they measure is not known; how far it is justifiable to treat the scores by ordinary arithmetic is not known; just what the scores signify concerning intelligence in general is in dispute. An intelligence examination is still a more or less undefined collection of tasks, its score is still a somewhat arbitrary summation of credits, and the correspondence of the scores to the abilities which they purport to measure is still far from perfect. Psychologists are working to supply these deficiencies, seeking to replace the undefined collections of tasks by tasks rigorously defined in nature and graded by a true scale of intellectual difficulty, so that the score may mean the precise height of intellectual difficulty which the person in question can master." *Encyclopedia Britannica* (13th Ed., 1926), II, 500.

[3] Poffenberger and Carpenter, "Character Traits in School Success," *Journal of Experimental Psychology*, VII (1924), 67–74.

show marked variations of achievement upon educational tests, not explicable upon the basis of differences in intelligence. What the child learns, in porportion to what he is capable of learning, is conditioned by a large number of variables, all of which have a direct bearing upon the educational quotient. Even the technique of the test itself penalizes the child who is unusually slow, or has a language handicap or a reading disability, since he must read all the questions and answer them within certain specified time limits.[4]

In the case of the accomplishment ratio, still more variables are involved, since this expresses the relationship between ratings on two tests (educational and intelligence tests), both admittedly imperfect and therefore in some respects unreliable. Ever since the introduction of the AR (or AQ) into educational measurements it has been under fire, although its use has been continued with certain reservations. At first the AR was held to be a measure of the child's efficiency, in the belief that maximum effort would result in an equal balance between intelligence and educational achievement, under favorable school conditions. This original conception has been somewhat modified in view of the sources of error to which both intelligence and educational tests are open, and environmental influences which may affect the AR are especially taken into consideration. Therefore, while we may still regard the AR as an approximate indication of educational achievement for mental ability, when it falls below or rises above the 90–110

[4] Guy M. Whipple, "Endowment, Maturity and Training as Factors in Intelligence Test Scores," *Scientific Monthly*, XVIII (1924), 496–507.

L. M. Terman, "The Mental Test as a Psychological Method," *Psychological Review*, XXXI (1924), 93–117.

Florence Mateer, "The Diagnostic Fallibility of Intelligence Ratios," *Pedagogical Seminary*, XXV (1918), 369–392.

range, we should try to discover the causes of this variation which may be sought in many different directions. Our present view of the AR, then, may well be that it is a measure of the efficiency of the whole educational environment to which the child is exposed as well as his reactions to these situations.[5]

Judgments of educational progress based upon the child's grade placement in relation to his life, mental and educational ages, are not wholly satisfactory. Promotions and demotions, in many schools, are dependent upon other things than ability or inability to do the work of a particular grade. Administrative details, such as the question of crowding, the child's classroom behavior, prejudices of teachers, special abilities or disabilities, are all important factors in the teacher's decision to promote or fail pupils. The older child may be "pushed" ahead and the younger child held back, regardless of their respective mental ability. More highly specialized effort is put into the instruction of dull children than of superior pupils. These things affect

[5] J. Crosby Chapman, "The Unreliability of the Difference Between Intelligence and Educational Ratings," *Journal of Educational Psychology*, XIV (1923), 103–108.

G. M. Ruch, "The Achievement Quotient Technique," *Journal of Educational Psychology*, XIV (1923), 334–343.

Toops and Symonds, "What Shall We Expect of the AQ?" *Journal of Educational Psychology*, XIII (1922), 513–528; XIV (1923), 27–38.

Raymond Franzen, *The Accomplishment Ratio: A Treatment of the Inherited Determinants of Disparity in School Product*, (New York: Teachers College, Columbia University, Contributions to Education, No. 125, 1922.)

T. L. Kelley, *Interpretation of Educational Measurements*, (Yonkers: World Book Co., 1927).

Terman et al., *Intelligence Tests and School Reorganization*, (Yonkers: World Book Co., 1923). See chapter by Franzen on "The Conservation of Talent."

Ruch and Terman, *Stanford Achievement Test Manual of Directions*, (Yonkers: World Book Co., 1926), 54–59.

Arthur S. Otis, *Otis Classification Test Manual of Directions*, (Yonkers: World Book Company, 1923), 24–31.

all our measurements of educational achievement, whether on the basis of test findings or grade placement.[6]

From the introspective account of the child,[7] together with inferential reasoning and judgment on the part of the psychiatrist and observation of the child's behavior, a list of personality traits is derived. Further suggestions are added from the reports on personality and conduct in the social history. An interpretation of physical and psychological findings also affords material for this purpose. The final inventory of personality traits in any case therefore represents a composite of personal opinion from many people—the psychiatrist, the medical examiner, the psychologist, the social worker, the parents and teachers (whose views are faithfully set down in the social history).[8] While at the present time we have no available methodology in complete and satisfactory form to offer as a substitute for this type of procedure, we cannot but recognize the dangers inherent in it. Psychological experimentation has shown the lack of validity in subjective judgments generally.[9] The

[6] John Louis Horn, *The Education of Exceptional Children* (New York: Century Co., 1924), 343.

Raymond H. Franzen and William H. Hanlon, *The Program of Measurement in Contra Costa County* (Martinez, Cal., Standard Print, 1923), 94.

Wm. A. McCall, *How to Measure in Education* (New York: MacMillan, 1923), chap. xi.

Arthur S. Otis, *Otis Classification Test Manual of Directions*, 34–42.

Terman et al., *Intelligence Tests and School Reorganization*, chap. iv.

[7] Recent studies by Syz have brought out the difficulty of an accurate introspection regarding emotional reactions. Hans C. Syz, "Observations on The Unreliability of Subjective Reports of Emotional Reactions," *British Journal of Psychology*, XVII (1926), 119–126.

[8] M. S. Brill, "Motivation of Conduct Disorders in Boys," *Journal of Delinquency*, II (1927), 19.

[9] H. L. Hollingworth, *Judging Human Character* (New York: Appleton, 1923), 268.

Harold Rugg, "Is The Rating of Human Character Practicable?", *Journal of Educational Psychology*, XIII (1922), 81–93.

Gordon W. Allport, "Personality and Character," *Psychological Bulletin*, XVIII (1921), 441–455.

special deviations attendant upon trying to analyze one personality and character trait independently of others have been described by Thorndike, who points out that ratings of special features of the personality are invariably influenced by feelings about the individual in general.[10]

There is a distinct tendency to rate the child on an "all-or-none" basis,[11] that is, upon the assumption that a trait is either present or absent, whereas the actual circumstances are more in harmony with the concept of a series of infinite gradations, continuous from one end of a scale to the other. For example, the child is considered hyperactive if he appears to be unusually restless and talkative; otherwise he is considered "normal" with respect to this trait, or else underactive, at the opposite extreme of the scale, in case he seems slow or sluggish in his physical and mental reactions. As a matter of fact, the state of activity in a group of children would undoubtedly be represented by many more degrees than the present terminology permits. Experiment in other fields of psychological inquiry has shown that the use of the all-or-none method of judgment is open to far larger probabilities of error than the rating of traits or conditions upon a point scale.[12]

Theoretically, it may seem a simple matter to say whether a child does or does not steal, but in actual practice this

[10] Edward L. Thorndike, "A Constant Error in Psychological Ratings," *Journal of Applied Psychology*, IV (1920), 25–29.

[11] This applies to use of classifications for such a study as this, but not to actual clinical procedure, where the psychiatrist does differentiate between degrees of severity in the treatment of cases.

[12] E. L. Thorndike, *An Introduction to the Theory of Mental and Social Measurements* (New York: Teachers College, Columbia University, 1913), 25.

E. L. Thorndike, *Educational Psychology* (New York: Teachers College, 1914), III, 331–335, 376–385.

Marion E. Kenworthy, M.D., "Psychoanalytic Concepts in Mental Hygiene," *The Family* (November, 1926) 213–223.

may not be so easy. Our knowledge of this or any other behavior pattern is taken largely from observations reported to the social worker by parents, teachers and others who have an opportunity to observe the child's daily life. In the minds of these observers, personal prejudices may exaggerate a minor fault into grave misconduct, or mere suspicion be crystalized into a statement of certainty. Even court records of misconduct cannot always be taken unquestioningly; we have had cases in which an error credited one child with offences perpetrated by a cousin of the same name, and others in which the record of charges included those of which the child had been accused as well as those of which he had been proven guilty.

So far as the statistical treatment of the data on behavior patterns is concerned, there are the same all-or-none methods of recording,[13] and the same emphasis on undesirable traits that are to be noted in the case of personality difficulties.

The difficulties attendant upon the statistical treatment of physical findings are well set forth in Chapter IX of Terman's *Genetic Studies of Genius,* Volume I. These may be briefly summarized as follows: differences of opinion of individual examiners; variations of methods of recording (diminished in our cases to some extent by the use of special record blank by the medical examiners); differences in diagnostic standards; reporting of even very minor conditions by some examiners, and a negative report by others unless the conditions are further developed; slight differences of technique in laboratory tests. The occurrence of such discrepancies does not imply any criticism of the medical examiners or their competency. Medical authorities

[13] The behavior rating scales which have been devised by Wickman should obviate many of the difficulties in evaluating behavior traits. See *Children's Behavior and Teacher's Attitudes,* Appendix A.

disagree on many fine points. Some examiners will naturally follow one group of authorities and others another in unsettled questions. Differences in past experience may also be a factor in determining the nature of reports. The physician who is used to a practice largely concerned with actual illnesses is more apt to neglect small symptoms and indications of possible trouble and to center his attention upon unmistakably pathological conditions, while a physician who has been engaged in preventive medicine and health work will also note the smaller signs which he feels will bear watching in order to avert future trouble. Moreover, certain branches of medicine, as well as of psychology, are still so new as to be the subject of hotly contested affirmation and denial. Widely divergent opinions which exist as to the symptomatology and meaning of these disputed conditions are inevitably reflected in the reports of medical examiners according to which theory they accept.

As in the case of descriptions of the child's behavior, the account of his social situation is also based upon observation and inference of parents, teachers, and other associates, with the additional observations and interpretations of the social worker. Upon the skill of the latter depends the sifting out of the essential facts from the mass of information presented by these others, who may often unconsciously try to soften certain phases or to color others more pleasingly, in the involuntary effort to paint as favorable a picture of themselves as possible. As every social worker knows, there are also informants whose distortions of the truth are more pronounced and at the same time more deliberate. Sometimes these falsifications, both conscious and unconscious, are suspected at the time the social history is secured; sometimes they are not revealed until further contacts in the course of treatment reveal facts and situations

hitherto concealed but bearing directly upon the problem in the case.

It seems desirable thus to mention the many variables with which we are forced to deal in attempting to utilize clinical case material for purposes of statistical investigation. To have such facts clearly in mind should be of some advantage to investigators who may wish to conduct further studies in this field.

In view of the small number of cases available for study, the numerous uncertainties entering into all the data about these cases, and the lack of a control group, it was not appropriate to use elaborate statistical methods in making the study. Comparisons have been made by separating the cases into two groups at an arbitrarily selected 100 mark. Under this plan distributions of ratings in the two groups are not considered; ratings between 70 and 99 are not differentiated. Further, in thus making up the groups a very fine distinction is made between ratings slightly lower than 100 and those which are slightly higher; no allowance is made for the fact that the IQ, the EQ, and the AR are not exact measurements.

VII

Analysis of Cases Presenting Highest and Lowest Accomplishment Ratios

THE material was subjected to another method of investigation. The ten children with the highest accomplishment ratios and the ten with the lowest were selected from the group of 167 Los Angeles cases. The selection on the basis of accomplishment ratio rather than educational quotient is defensible on the grounds that the accomplishment ratio represents as well as any measure now available discrepancies between intelligence and educational achievement. (See discussion of the accomplishment ratio, page 45.)

If a difference actually exists between children of high and low educational achievement, it should be apparent at the two extremes more readily than elsewhere. Hence the advisability of selecting the ten highest and ten lowest accomplishment ratios in order to compare the characteristics of the children credited with these in the fields of physical make-up, personality, behavior, and social conditions. Since the high accomplishment ratio indicates superior educational achievement for mental ability, while the low accomplishment ratio implies achievement falling below what could be expected on the basis of mentality, here, if anywhere, we should have the two extremes of our group.

There seems to be no marked difference of intelligence level for the very high and very low ARs. Eight of the ten children with low ARs have IQs above 100, while there are

seven IQs above 100 for the high ARs. The average IQ for the group with highest ARs was 107.6; the average for the lowest AR group was 101.4. These data would indicate that in these particular children intellectual ability was not an important factor in determining the differences in educational achievement.

Perhaps the divergence of educational achievement will appear more clearly through a presentation of the EQ and AR ranges and averages. The EQ range for the ten children with the highest ARs is from 96 to 159; for the ten with the lowest ARs, from 62 to 95. The average EQ for the low AR group is 77.4, for the high AR group is 127.9. The highest ARs range from 113 to 128; the lowest from 70 to 80. The average for the ten lowest ARs is 75.8, for the ten highest is 118.5 or approximately 43 points difference.

The ten cases with highest and the ten with lowest ARs were analyzed with respect to the occurrence of personality and behavior difficulties, physical defects, and undesirable social conditions for each group. So far as extent and nature of personality difficulties are concerned, there is little difference between the children in the two groups. There are slight differences in respect to individual traits, but these tend to balance each other and not to fall predominantly within either the high or low AR group. There is a slight preponderance of behavior difficulties for the ten children with the lowest ARs. However, the only particular behavior pattern which stands out to any noticeable degree on one side or the other, is the existence of five cases of truancy among the children with the lowest ARs in contrast to the one truancy case among the children with highest ARs. What cause and effect relationship may be deduced from this is somewhat indeterminate. We do not know whether we should conclude that truancy contributes to poor educational

achievement and influences the AR rating, or whether the statement should be reversed to the suggestion that the child has developed truancy because of lack of interest and failure in school work of which the AR is a numerical symbol.

The total number of physical defects is slightly larger for the ten children with lowest ARs. The only noticeable difference in regard to any specific condition is the greater number of undernourished children in the group having the lowest ARs, and the preponderance of endocrine symptoms with the highest ARs.

The environmental conditions are somewhat more unfavorable for the children with lowest than for those with highest ARs.

Thus for behavior difficulties, physical defects, and unfavorable environmental conditions, there is a consistent though small preponderance in the group of ten children with lowest ARs. Though this difference is so slight that we might easily think of it as negligible, perhaps the combined force of physical and social handicaps and behavior deviations may interfere with educational achievement to a greater extent than the slight difference would indicate. It may be a nice point to discover, through further research, how associated factors interact and what is the maximum load which the child can sustain before his ability for scholastic achievement breaks down.

One very marked difference between the two AR groups should be noted. It concerns interest and ability in reading. In the highest AR group, all but one are described as very fond of reading, having excellent proficiency in this subject, and devoting considerable time to it. On the other hand, only one of the ten children with the lowest ARs was at all fond of reading, one had a marked disability in this subject, three were noted as poor readers, and one

frankly disliked it. This divergence is in harmony with the results of other studies which show that rapid reading and good educational achievement are intimately associated.[1] Proficiency in reading is a tool for mastering other subjects of the curriculum, such as geography, history, and even arithmetic, which in the average public school depend upon study of textbooks.[2]

[1] H. C. Morrison, *The Practice of Teaching in the Secondary School* (Chicago: University of Chicago Press, 1926), 277.

A. I. Gates, *The Improvement of Reading* (New York: Macmillan, 1927), especially 3–5.

[2] See also Blanchard, "Reading Disabilities in Relation to Maladjustment," *Mental Hygiene*, XII (1928), 772–778. It is to be noted that reading disabilities may cause personality and behavior difficulties as well as school failures.

VIII

Other Investigations

BEFORE we consider the general conclusions to which our study leads us, it is of interest to review briefly the results of other investigations in this or allied fields. Two methods have been used in these investigations: individual case study with generalizations drawn therefrom, and statistical treatment of data. The statements made on the basis of the first method are in general consistent in their agreement as to a significant relationship between personality and behavior deviations and poor scholastic standing.

A few brief references will serve to indicate the literature which presents the case study point of view. Dr. Esther Loring Richards, in a paper reporting a study of forty-six maladapted children in a Baltimore school, states: "The academic troubles of the remaining nineteen" (not mentally deficient) "were associated with, if not the disguised expression of, such faulty psychobiological reactions as shyness, laziness, inattention, and vicious tendencies, sensitiveness to criticism, day-dreaming, hypochondriacal fears . . . In the majority of cases . . . the unhealthy habits of adaptation began in the home, and were carried into and through school life, handicapping the efforts of the teacher . . . and the commonest result of this handicapping was the repetition of grades."[1]

Sands and Blanchard, in discussing educational maladjustments, imply that emotional disturbances originating

[1] Esther Loring Richards, M.D., "The Elementary School and The Individual Child," *Mental Hygiene*, V (1921), 707–723.

in pathological home situations are sometimes causes of failures in school, and cite cases in support of this implication.[2]

Irwin and Marks believe that the child's emotional states and conduct disorders condition his educational history. They refer to the poor school records of criminals, with the summarizing statement: "Wherever life studies are made of the inmates of prisons, it appears over and over again that they did not get along well in school." They explain that while this is due to feeblemindedness in some cases, in others it is an outcome of such behavior patterns as insubordination, truancy, idleness, etc. There is also a strong implication as to the effect of emotional disturbances on the scholastic achievement of the child in the following words: "One of the principal benefits of the neurotic class is the amount of light it sheds on the education of normal children. . . . We have learned through the neurotic child to what a startling degree the emotional status of an individual conditions his intellectual functioning."[3]

Holmes, in his book *Backward Children*, describes two types: the permanently retarded, who are so because of intellectual deficiencies, and the temporarily retarded. Of the latter type, he says that some of them show improvement immediately after removal of physical defects, others after removal from bad homes or bad neighborhoods. Still others represent the "bad and backward" child, whose conduct disorders interfere with scholastic achievement. Holmes states: "The causes for retardation very often lie in the child's home or in his neighborhood or in the kinds of companionship he keeps. . . . Because of their

[2] Sands and Blanchard, *Abnormal Behavior* (New York: Dodd, Mead & Co., 1923), chap. xi, "Educational Maladjustments."

[3] Elizabeth Irwin and Louis A. Marks, *Fitting the School to the Child* (New York: Macmillan, 1924), 206–207.

exceeding triviality, the causes are frequently overlooked."[4] He gives examples of cases in which mental conflicts arising out of maladjustment in the home produce retardation in school.

The present writers, in a study of problem children published in 1924, as a result of intensive case studies came to similar conclusions, which they expressed as follows: "We are apt to think of retardation in school as associated with marked intellectual dullness or mental defect. In actual practice, we find that many other factors may enter into the picture. Physical condition, emotional attitudes, interests and inclinations, and many other circumstances must all be given due consideration in our attempt to understand the reasons for the child's backwardness in school."[5]

Studies of 132 problem cases in the University of Chicago High School (1921–25) show personality difficulties to be second in frequency among the causes of poor educational achievement. The order of importance is as follows: ineffective habits of work, personality difficulties, deficiencies in training, physical disabilities, mental disabilities, and psychophysical defects.[6]

The studies employing statistical methodology are more at variance. While some indicate that there is a significant relationship between poor educational achievement and personality and behavior deviations, others find no such correlation.

In the Horace Mann School Dr. Arthur Gates studied the correlation of emotional and social maturity with educational achievement. The criteria for emotional maturity were

[4] Arthur Holmes, *Backward Children* (Indianapolis: Bobbs-Merrill Co., 1915), 110.

[5] Blanchard and Paynter, "The Problem Child," *Mental Hygiene*, VIII (1924), 26–54.

[6] W. C. Reaves, *Pupil Adjustment* (New York: Heath, 1926), 124, Table XVIII.

such as to exclude any apparent personality difficulties and emotional disturbances, while social maturity was synonymous with the absence of conduct disorders. The correlation coefficient between social maturity and educational achievement, according to Gates' computations, is 0.19; between emotional maturity and educational achievement, 0.20. Gates concludes, therefore, that social and emotional maturity have no great influence on educational achievement. He says: "By many writers it is often implied, if not asserted, that social and emotional maturity enter potently into the determination of scholastic achievement. While this has been implied, it has never, to our knowledge, been substantiated by experimental evidence."[7] Thus, Gates finds that the children free from personality and behavior disorders, or as he expresses it, those who are emotionally and socially mature, do not show any benefit from this normal functioning of personality and conduct in their educational achievement.

Dr. Esther K. Rosen investigated the intellectual and educational status of neurotic as compared to normal children. Each neurotic child studied by Dr. Rosen was paired with a normal mate—i.e., a normal child of the same age, sex, nationality, grade, and school. The neurotics compared very favorably with the controls as to intelligence and educational achievement (measured by tests) but comparison with an unselected sample of the school population indicated that the neurotic group was below par intellectually and more retarded on an age-grade basis. Dr. Rosen concludes that a greater proportion of neurotics are found among the stupid, and that while their scholastic achievement is as good as that of a selected group of the same age-grade

[7] Arthur I. Gates, "The Nature and Educational Significance of Physical Status and of Mental, Physiological, Social and Emotional Maturity," *The Journal of Educational Psychology*, XV (1924), 329–358.

standing, it is poor in comparison with the standards of unselected school children. It seems probable, however, that the inferiority of achievement shown by both the neurotics and the controls in her study is largely a function of their low intelligence. There is, the author states, no evidence that the educational achievement is affected by emotional factors in the case of the neurotics.[8]

Cyril Burt, estimating the educational achievement of delinquents, summarizes his figures in the following statements: "Thus, on an average, the delinquents are retarded by nearly two years in general intelligence, and by yet a further two years—four years in all—in educational attainments."[9]

It should be noted that Burt's findings are for definitely delinquent pupils, while our study is concerned with less flagrant types of conduct disorders.

Dr. Johnson studied the relation between retardation in school and maladjusted behavior. Her findings were based on a group of 123 "classroom problems" and 107 truants, compared with control groups (showing no conduct disorders) from the same school. Dr. Johnson concluded that misconduct often accompanied school retardation but that it might be either a cause or a result of the retardation.[10]

Here, again, it should be pointed out that Dr. Johnson's material differs widely from ours because she included cases of mental deficiency, while we excluded this factor in our selection of cases.

Blatz and Bott investigated the behavior of 843 pupils in one public school and report that the number of misde-

[8] Esther K. Rosen, *A Comparison of the Intellectual and Educational Status of Neurotic and Normal Children in Public Schools* (Teachers College, Columbia University: Contributions to Education No. 188, 1925).

[9] Cyril Burt, *Mental and Scholastic Tests* (London: King & Son, 1921), 185–186.

[10] Eleanor Hope Johnson, *School Problems in Behavior* (Hartford: Hartford School of Religious Education, 1925).

meanors decreases as the intelligence quotient increases, in the case of the boys, but that the number of conduct disorders is about the same for all the levels of intelligence for the girls. There is, however, a slight decrease for the girls, also, in cases where the IQ is above 110. The number of cases is about equally divided between the two sexes. Only thirty-eight of the children had IQs below 80, so that it is fairly comparable to our investigation from this viewpoint. No educational measurements are reported.[11]

[11] Blatz and Bott, "Studies in Mental Hygiene of Children," 552–582.

IX

Conclusions

IT seems safe to conclude, tentatively at least, that problem children show no general tendency to low educational achievement. This does not mean that educational adjustment (in the narrow sense of scholastic accomplishment) is never affected by the child's difficulties in other than intellectual fields. Anyone who has worked with individual case material knows that sometimes there may be a very definite cause and effect relationship between the child's problems and his school failures. There has, perhaps, been too much of a temptation to generalize on the basis of these individual case studies, and to imply that the existence of personality and behavior deviations will necessarily impair educational achievement. All that we wish to point out, as the outcome of our investigation, is the absence of any such general trend. It still remains true that in certain pupils the failure to rise to normal levels of achievement is the result of emotional maladjustments;[1] but it would appear that the number of these cases is smaller than one might think after reading some of the literature.

[1] It seems reasonably certain, from experiments under controlled laboratory conditions as well as from clinical studies, that emotional conditionings specifically associated with the learning situation may cause a special disability for some subject, as reading, arithmetic, etc.; that the special disability may lower educational achievement as a whole; that the school failure may give rise, in turn, to feelings of inferiority with compensatory behavior patterns of undesirable nature. See: Blanchard, "Reading Disabilities in Relation to Maladjustment"; Blanchard, "Attitude and Educational Disabilities" (soon to appear in *Mental Hygiene*); Hincks, E. M., *Disability in Reading and Its Relation to Personality*, (Harvard University Press, 1926).

In the case of the children whom we have studied, although we do not find that their educational achievement has been impaired to any great extent by their difficulties, we may still see that they are being ill prepared for adaptation to economic and social demands which will be made upon them in maturity. While we cannot consider that they are educational misfits in the narrow meaning of scholastic standing, if we conceive education to have a broader function—the preparation of the child for adult social adjustments—we must consider that it is a healthy sign that so many children are considered maladjusted by teachers on other grounds than those of educational attainment and grade placement. In this connection, it is pertinent to note that both in Los Angeles and in Philadelphia teachers, principals, nurses or other persons employed within the school system requested clinical study in 31 per cent of the cases included in this study. Another 26 per cent of the Los Angeles cases and another 39 per cent of the Philadelphia cases were also regarded as problems by teachers, although the request for clinical study and treatment was made by others. Thus, more than half of the Los Angeles and nearly three-fourths of the Philadelphia cases were recognized as problems in school despite the fact that their maladjustment was manifested in other ways than poor scholastic standing.

To be sure, there are still many symptoms of maladjustment which are not observed by teachers, either because their appearance is confined to the home, or because they are traits of personality and behavior which do not stand out in the classroom by interfering with discipline and order or with educational achievement. Recent studies[2] have shown that there is a marked tendency for teachers and school

[2] E. K. Wickman, *Children's Behavior and Teachers' Attitudes*, chap. vi.

officials to rate as serious problems such manifestations as truancy, stealing, fighting, and disobedience, while considering such personality deviations as seclusiveness, fearfulness, day-dreaming, sensitivity, and neuroticism of exceedingly minor importance. Yet these personality difficulties are as likely to lead to vocational and social maladjustments in maturity as are the overt behavior disorders which are forced upon the attention of teachers. A distinct advance in the socialization of the school is indicated, however, by the increasing recognition of childhood problems which are not directly and immediately concerned with the curriculum or classroom routine, and by the use of clinics, visiting teachers and other agents to improve the pupil's life adjustment.

APPENDIX

TABLE A

PERSONALITY DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR LIFE AGE

*Personality difficulty**	*Grade placement for life age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*63*	*39.9*	*78*	*49.4*	*17*	*10.7*
Mental conflict	35	49.3	28	39.4	8	11.3
Hyperactive	9	24.3	24	64.9	4	10.8
Inferiority feelings	16	51.6	12	38.7	3	9.7
Emotional	6	24.0	11	44.0	8	32.0
Inadequate	10	45.5	12	54.5	..	....
Fearful	7	33.3	11	52.4	3	14.3
PHILADELPHIA						
Total children in group	*52*	*32.7*	*78*	*49.0*	*29*	*18.3*
Mental conflict	11	31.5	20	57.2	4	11.3
Inferiority feelings	26	30.2	38	44.2	22	25.6
Fearful	8	33.3	9	37.5	7	29.2
Day-dreaming	9	32.2	15	53.6	4	14.2

* All the totals in this table may not agree with other tables showing personality difficulties, because this table does not include children in adjustment or disciplinary classes.

TABLE B

PERSONALITY DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR MENTAL AGE

*Personality difficulty**	*Grade placement for mental age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*70*	*44.3*	*63*	*39.9*	*25*	*15.8*
Mental conflict	32	45.1	28	39.4	11	15.5
Hyperactive	13	35.1	19	51.4	5	13.5
Inferiority feelings	10	32.2	14	45.2	7	22.6
Emotional	12	48.0	9	36.0	4	16.0
Inadequate	6	27.2	11	50.0	5	22.8
Fearful	7	33.3	8	38.1	6	28.6
PHILADELPHIA						
Total children in group	*56*	*35.2*	*67*	*42.2*	*36*	*22.6*
Mental conflict	13	37.1	10	28.6	12	34.3
Inferiority feelings	34	39.6	26	30.2	26	30.2
Fearful	6	25.0	12	50.0	6	25.0
Day-dreaming	15	53.5	7	25.0	6	21.5

* See footnote on Appendix Table A.

TABLE C

PERSONALITY DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR EDUCATIONAL AGE

*Personality difficulty**	*Grade placement for educational age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*43*	*27.2*	*73*	*46.2*	*42*	*26.6*
Mental conflict	20	28.2	32	45.0	19	26.8
Hyperactive	7	18.9	20	54.1	10	27.0
Inferiority feelings	7	22.6	7	22.6	17	54.8
Emotional	7	28.0	13	52.0	5	20.0
Inadequate	4	18.2	8	36.3	10	45.5
Fearful	3	14.3	12	57.2	6	28.5
PHILADELPHIA						
Total children in group	*34*	*21.4*	*86*	*54.1*	*39*	*24.5*
Mental conflict	6	17.1	18	51.5	11	31.4
Inferiority feelings	18	21.0	45	52.3	23	26.7
Fearful	3	12.5	16	66.6	5	20.9
Day-dreaming	6	21.4	13	46.4	9	32.2

* See footnote on Appendix Table A.

TABLE D

BEHAVIOR DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR LIFE AGE

*Behavior difficulty**	*Grade placement for life age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*63*	*39.9*	*78*	*49.4*	*17*	*10.7*
Stealing	29	51.7	23	41.2	4	7.1
Lying	17	36.2	25	53.2	5	10.6
Truancy	14	42.5	18	54.5	1	3.0
Disobedience	8	22.9	21	60.0	6	17.1
Running away	13	46.5	15	53.5	..	....
Sex experiences	20	50.0	14	35.0	6	15.0
Speech defects	9	40.9	9	40.9	4	18.2
PHILADELPHIA						
Total children in group	*52*	*32.7*	*78*	*49.0*	*29*	*18.3*
Stealing	23	37.8	30	49.1	8	13.1
Lying	21	35.6	30	50.9	8	13.5
Truancy	19	43.2	21	47.8	4	9.0
Disobedience	7	23.3	16	53.4	7	23.3
Running away	12	48.0	12	48.0	1	4.0
Temper tantrums	12	28.6	23	54.8	7	16.6
Bullying	9	37.5	11	45.9	4	16.6

* All the totals in this table may not agree with other tables showing behavior difficulties because this table does not include children in adjustment or disciplinary classes.

TABLE E

BEHAVIOR DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR MENTAL AGE

*Behavior difficulty**	*Grade placement for mental age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*70*	*44.3*	*63*	*39.9*	*25*	*15.8*
Stealing	23	41.1	24	42.9	9	16.0
Lying	20	42.6	21	44.6	6	12.8
Truancy	17	51.5	12	36.4	4	12.1
Disobedience	15	42.9	15	42.9	5	14.2
Running away	15	53.6	10	35.7	3	10.7
Sex experience	18	45.0	15	37.5	7	17.5
Speech defects	11	50.0	7	31.8	4	18.2
PHILADELPHIA						
Total children in group	*56*	*35.2*	*67*	*42.2*	*36*	*22.6*
Stealing	15	24.6	31	50.8	15	24.6
Lying	18	30.5	26	44.1	15	25.4
Truancy	16	36.3	18	41.0	10	22.7
Disobedience	10	33.3	16	53.4	4	13.3
Running away	10	40.0	9	36.0	6	24.0
Temper tantrums	14	33.4	20	47.6	8	19.0
Bullying	10	41.7	11	45.9	3	12.4

* See footnote on Appendix Table D.

TABLE F

BEHAVIOR DIFFICULTIES IN RELATION TO GRADE PLACEMENT FOR EDUCATIONAL AGE

*Behavior difficulty**	*Grade placement for educational age*					
	Below grade		*At grade*		*Above grade*	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
LOS ANGELES						
Total children in group	*43*	*27.2*	*73*	*46.2*	*42*	*26.6*
Stealing	14	25.0	24	42.8	18	32.2
Lying	11	23.4	19	40.4	17	36.2
Truancy	8	24.2	14	42.5	11	33.3
Disobedience	10	28.6	17	48.5	8	22.9
Running away	10	35.7	11	39.3	7	25.0
Sex experiences	11	27.5	21	52.5	8	20.0
Speech defects	6	27.4	8	36.3	8	36.3
PHILADELPHIA						
Total children in group	*34*	*21.4*	*86*	*54.1*	*39*	*24.5*
Stealing	13	21.3	32	52.5	16	26.2
Lying	8	13.5	33	56.0	18	30.5
Truancy	7	16.0	24	54.5	13	29.5
Disobedience	8	26.7	16	53.3	6	20.0
Running away	5	20.0	14	56.0	6	24.0
Temper tantrums	9	21.5	23	54.8	10	23.7
Bullying	6	25.0	14	58.4	4	16.6

* See footnote on Appendix Table D.

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